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ABSTRACT

Underlying the programs of undergraduate colleges is the assumption that the 4-year educative process will produce some change in students. This study sought to determine the changes in values of college students by administering the Allport-Vernon-Lindzey (AVL) "Study of Values" three times to the same undergraduate class and once to 185 faculty members. A sample of the same class took the "Cooperative General Culture Test" four times. Findings show that AVL aesthetic scores increased, and religious scores decreased for the class as a whole. Political values increased for men and economic values decreased for women. The change in aesthetic scores occurred later for men than women, whereas, the change in religious scores occurred later for women than men. A 9-fold curriculum group breakdown showed similarities between the acquisition of particular kinds of cultural information and changes in corresponding values. The AVL profiles of undergraduates tended to become more clearly defined during their college careers and to resemble those of the faculty in the same curriculum area more closely. (Author/HS)

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Underlying the programs of undergraduate colleges is the assumption that the four-year educative process will produce some change in students. Many studies have shown that the academic information of seniors is greater than that of freshmen. It has not been clearly demonstrated that increased knowledge has a significant effect on changing values. In 1957 Philip Jacob summarized the results of a large number of studies, and came to the conclusion that few significant changes in values occur during the college years.

Longitudinal data obtained from the same students over a four-year period were used in this study. Attempts were made to answer the following questions: Do values change during four years of college? If so, does the greatest change occur during the first two years or during the last years? Does the curriculum group in which a student is enrolled affect the amount and direction of change? Are the value profiles of students more like those of the faculty in their field at the end of four years, than they were as freshmen? Is the acquisition of different types of cultural knowledge related to changes in values?

Procedure

The Allport-Vernon-Lindzey Study of Values was administered to all entering freshmen at the University of Delaware in September 1961 (N=985). Of these students 314 completed the questionnaire

towards the end of the second semester of their senior year, 1965. Of this group 175 also completed the inventory during the second semester of their sophomore year, 1963. During the senior administration 155 other members of the class also completed the inventory, and during the sophomore administration, 214 additional members participated. The smaller groups that were tested two or three times were comparable with the larger groups from which they were drawn, the possible exception being that the 53 men who were tested three times had a Religious score as freshmen that was 2.0 higher than that for the total group of male freshmen (N=554). All other comparable scores differed by less than 2 points, the large majority by only a fraction of a point.

This same class also took the Social Studies, Literature, Science, and Fine Arts sub-tests of the Cooperative General Culture Test four times. Form B was taken by 999 freshmen in 1961. Of this group 530 took Form A as sophomores, 270 took Form B again as juniors, and 115 seniors took the test for the fourth time in 1965, again using Form A. These were not necessarily the same students who took the AVL three times, but there was some overlapping of the two groups.

The Allport-Vernon-Lindzey was also administered to 185 faculty members in March, 1962, in order to compare their profiles with those of students in their curriculum groups, both as freshmen and seniors.

Results

Change over Entire Four Years

From Table 1 it can be seen that on the AVL there was a significant increase in the Aesthetic score between the freshman and senior years for both men and women. During the same period the Religious score has decreased significantly for both men and women. For the men there is a small, but significant, increase in Political interests, and for the women a decrease in the importance attached to values in the Economic area.

Insert Table 1

Change during First Two and Last Two Years

In order to determine where in the college years these changes took place the scores of those students who had taken the inventory three times were examined. Their scores are shown in Table 2.

For men students a significant decrease in Religious scores and increase in Political scores occurred between the beginning of the freshman and end of the sophomore years. Most of the change in Political values occurred during this time period, but the decrease in Religious scores was slightly greater during the last two years of college than the first two. For the men students the increase in the Aesthetic score took place almost entirely between the end of the sophomore and end of the senior years.

For the women the most significant change between the freshman and sophomore year was in the importance attached to Aesthetic values, but a slightly greater increase in this area occurred during the last two years in college. A significant decrease in the importance attached to Political values occurred between the freshman and sophomore years, but this trend was reversed during the junior and senior years. The decrease in the Economic score was slightly greater during the last two years than during the first two years, and the decrease in Religious scores for the women occurred almost entirely during the junior and senior years.

Insert Table 2

Changes for Various Curriculum Groups

A separate analysis was made of changes in values among students students in nine different curriculum groups. The differences that were statistically significant at the .10 level or better are shown in Table 1. Among all curriculum groups there was a significant decrease between the freshman and senior years in the importance attached to Religious values. Six of the nine groups showed a significant increase in the importance attached to Aesthetic values, the exceptions being the predominantly male groups in Engineering, Physical Science, and Business and Economics. The other predominantly male group is Agriculture. Initially students in this field were lower on Aesthetic values than any other curriculum group, but

as seniors their score was about the same as that for Engineers, and higher than that for students in Business and Economics. Students in the Humanities and in Education showed the greatest overall increase in the Aesthetic area.

Although for the whole class there was a significant increase in Political values, in only three curriculum groups did the change reach significance. These groups were Engineering, Business and Economics, and the Social Sciences. The Engineering and Business students also showed a significant increase in Economic scores, whereas the score for Education majors in this area decreased.

The greatest change in Theoretical values occurred among students in Business and Economics, whose score decreased significantly. There was an increase in Theoretical scores, significant between the .05 and .10 levels, for students in Biology, Social Sciences and Agriculture. Physical Science students initially scored higher in this area than any other group, and their score increased by 2.1 points, but due to the small number of students in this curriculum, this failed to reach statistical significance.

Social values only increased for one curriculum group, namely Home Economics. Among all groups the greatest changes which occurred were the increases in Aesthetic scores for the Education and Humanities students, and the decrease in Religious scores for the Social Science students.

Comparison of AVL Results and CGCT Results

The same class that took the AVL three times took the Social Studies, Literature, Science, and Fine Arts sub-tests of the Cooperative General Culture Test (CGCT) four times. The same form of the test (Form B), was used for the freshman and junior administrations. For this reason the difference in score between the junior and freshman administrations was used as a measure of acquisition of cultural information. Another reason for using this measure was that the number of students that took the test three times was considerably larger than the number that took it four times. The changes in CGCT scores between the freshman and junior administrations are shown in Table 3.

Insert Table 3

Some interesting parallels can be observed between these results, and the changes which occurred in AVL scores. In the value data the most significant change for any curriculum group was the increase in the Aesthetic score for Education majors. Similarly on the CGCT the largest increase in score was in the Fine Arts subtest for students in Education. Humanities students, on both these scores, made the second largest gains, but their initial score in both cases was higher. Three curriculum groups, Agriculture, Engineering, and Business and Economics showed no improvement on the Fine Arts sub-test. Two of these three, Engineering and Business showed no significant increase in AVL Aesthetic scores.

The only curriculum group that showed no improvement on the CGCT Science sub-test was Business and Economics. This was also the only group for which the AVL Theoretical score decreased significantly. Physical Science students made the highest score on the Science test, and also the highest score on Theoretical values, but due to their initially high standing, there was not as much increase in these two scores, as for some other curriculum groups.

Only four curriculum groups showed a significant improvement on the CGCT Literature score, namely Biology, Humanities, Home Economics and Education. These four disciplines were also all ones in which AVL Aesthetic scores increased. Social Science and Agriculture were the other two groups in which Aesthetic Scores increased significantly. Agriculture students, in spite of gaining little knowledge in Fine Arts, and actually scoring lower on the Literature test as juniors than as freshmen, did become somewhat more interested in Aesthetic matters, judging from their AVL scores.

Comparison between Student and Faculty Value Profiles

Do the value systems of students become more like those of the faculty in their major area? To answer this question rank-order correlation coefficients were calculated between the average profile of students in a particular curriculum group as freshmen, the average profile of these same students as seniors, and the average profile of faculty members in the same curriculum area. These coefficients, and the numbers of students and faculty members used to find the average profiles appear in Table 4. The actual scores, rounded to the nearest whole numbers, from which these correlations were computed, are shown in Table 5.

Insert Tables 4 & 5

In the following curriculum groups the correlations between the senior and faculty profiles were markedly higher than the freshman-faculty correlations: Physical Sciences, Biology, Social Sciences, Engineering, and Education. The correlations between freshmen and faculty were about the same as those between senior and faculty in Agriculture, and Business and Economics. In Home Economics the senior-faculty was slightly lower than the freshman-faculty correlation, whereas for Humanities the senior-faculty rank-order coefficient was considerably lower than that between freshmen and faculty. The low senior-faculty correlation for this curriculum was caused mainly by the fact that the faculty placed Theoretical values in second position, whereas for seniors it was in last place. For Home Economics the decline in the size of the correlation was caused mainly by the fact that seniors were higher on Social values than they were as freshmen. This score was in third position for seniors and in last place for the faculty.

By comparing the shape of the AVL profiles for entering freshmen with those for the same students as seniors, and for the faculty, it was noted that the profiles for freshman students were usually rather flat, for seniors a more definite value system had developed, and the highest peaks and dips occurred for the faculty profiles, particularly in the four Arts and Science curricula: Physical Science, Biology, Social Science and Humanities. See Fig. 1.

Summary and Discussion

This study shows that for a representative sample of undergraduate students certain values, as measured by the Allport-Vernon-Lindzey Study of Values do change significantly between the freshman and senior years. Both men and women attach more importance to Aesthetic values and less to Religious values as seniors than they did as freshmen. For men Political values increase and for women Economic values decrease. For women most of the change in the Religious score occurs during the last two years in college, and for men most of the increase in Aesthetic scores occurs in the junior and senior years. These findings are of interest, as the greatest change in values and interests reported in previous studies, has usually occurred between the freshman and sophomore years.

Since we did not have a non-college control group, we cannot say that the college experience necessarily brought about the changes in values which occurred. However, differences between curriculum groups, and the fact that student profiles tended to become more similar to those of the faculty in the same academic area, tend to support the hypothesis that change was not purely due to maturation. The correspondence between the Cooperative General Culture Test results and the changes in values seems to further confirm the belief that the college experience did, at least partially, bring about the value changes. Two of the most significant changes in values were the increases in Aesthetic scores for students in Education and the Humanities. These increases coincided with an increase in knowledge of Fine Arts and Literature. The

increase of knowledge in these areas is not surprising for the Humanities majors. In Elementary Education one of the required courses in the freshman year is Art History, and Elementary Design or Art Materials is a required course in the junior year. These required courses apparently do bring about both an increase in knowledge of fine arts, and a change in the importance given to Aesthetic values. Similarly Business and Economics students were the only ones who showed no improvement on the CGCT Science score, and the only ones who showed a marked loss of interest in Theoretical values. It would seem from these results that the cognitive and conative aspects of personality are constantly interacting, and a change in one is often reflected by a change in the other.

Jacob (1957) made the statement that: 'There is more homogeneity and greater consistency of values among students at the end of their four years than when they began (p.4).' Our results do not bear this out. As freshmen the average sum of the deviations from 40 for the nine curriculum groups was 18.9, as seniors it was 24.0. As freshmen most curriculum groups had rather flat homogeneous profiles, but these became more peaked and more distinctive for each curriculum group after four years. They also tended to become more like those of the faculty in the same curriculum area.

MAR 2 1 1969

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Jacob, P. E. Changing values in college. New York: Harper, 1957.

Table 1

Significant Changes in AVL Scores between the Freshman and Senior Years

Curriculum	N	T		E		A		S		P		R	
		d	p	d	p	d	p	d	p	d	p	d	p
Physical Science	18	-	-	-	-	-	-	-	-	-	-	-6.4	.01
Biology	43	2.7	.10	-	-	4.3	.01	-	-	-	-	-5.8	.01
Social Science	45	1.7	.10	-	-	6.0	.01	-	-	1.6	.10	-8.3	.01
Humanities	30	-	-	-	-	6.9	.01	-	-	-	-	-4.4	.05
Agriculture	13	4.2	.10	-	-	5.6	.05	-	-	-	-	-5.6	.05
Home Economics	32	-	-	-	-	2.6	.05	3.0	.05	-	-	-4.8	.01
Engineering	38	-	-	3.2	.05	-	-	-	-	2.7	.01	-7.6	.01
Business & Economics	16	-6.9	.01	4.6	.05	-	-	-	-	4.3	.10	-4.1	.10
Education	79	-	-	-2.0	.02	7.0	.01	-	-	-	-	-5.1	.01
Men	119	-	-	-	-	3.2	.01	-	-	2.3	.01	-6.6	.01
Women	195	-	-	-1.3	.02	5.9	.01	-	-	-	-	-5.4	.01
Total	314	-	-	-	-	4.9	.01	-	-	1.2	.01	-5.9	.01

Table 2

Change in AVL Scores during First Two Years, Last Two Years, and all Four Years of College

	T	p	E	p	A	p	S	p	P	p	R	p
Men (N=53)												
Freshmen	45.1		43.0		33.6		35.8		41.2		41.4	
Sophomores	45.7		44.3		34.1		34.8		42.7		38.4	
Seniors	46.4		44.5		36.9		34.1		43.2		34.9	
So - Fr	0.6	n.s.	1.3	n.s.	0.5	n.s.	-1.0	n.s.	1.5	.05	-3.0	.01
Sr - So	0.7	n.s.	0.2	n.s.	2.8	.01	-0.7	n.s.	0.8	n.s.	-3.5	.01
Sr - Fr	1.3	n.s.	1.5	n.s.	3.3	.02	-1.7	n.s.	2.0	.05	-6.5	.01
Women (N=122)												
Freshmen	37.3		38.1		39.8		40.6		38.7		45.4	
Sophomores	38.1		37.3		42.5		40.0		37.6		44.4	
Seniors	38.3		36.2		45.6		39.9		39.2		40.8	
So - Fr	0.8	n.s.	-0.8	n.s.	2.7	.01	-0.6	n.s.	-1.1	.05	-1.0	n.s.
Sr - So	0.2	n.s.	-1.1	.05	3.1	.01	-0.1	n.s.	1.6	.01	-3.6	.01
Sr - Fr	1.0	n.s.	-1.9	.01	5.8	.01	-0.7	n.s.	0.5	n.s.	-4.6	.01

Table 3

Difference in Scores on the Cooperative General Culture Test (Form B)

between the Freshman and Junior Years

Curriculum	N	Social Studies d	Social Studies p	Literature d	Literature p	Science d	Science p	Fine Arts d	Fine Arts p
Physical Sci	10	4.4	.002	1.8	n.s.	3.6	.002	6.4	.002
Biology	31	5.8	.002	3.1	.002	4.3	.002	5.8	.002
Social Sci	17	6.2	.002	2.2	n.s.	3.1	.01	6.4	.002
Humanities	19	4.5	.01	6.6	.002	2.2	.01	6.9	.002
Agriculture	12	6.7	.002	-2.4	n.s.	5.3	.01	0.7	n.s.
Home Econ.	20	5.2	.01	3.6	.01	5.8	.002	5.4	.002
Engineering	20	6.5	.002	0.6	n.s.	3.8	.002	0.9	n.s.
Business & Ec.	9	5.7	.01	1.5	n.s.	-0.7	n.s.	-0.9	n.s.
Education	65	5.5	.002	3.4	.002	4.5	.002	8.1	.002

Table 4

Rank Order Correlation Coefficients between AVL Profiles for for Freshmen and Faculty, and Seniors and Faculty

Curriculum Group	Faculty N	Student N	Fr-Fac. Corr.	Sen-Fac. Corr.
Physical Sciences	18	18	.26	.60
Biology	9	43	.03	.94
Social Sciences	27	45	-.16	.66
Humanities	37	30	.66	.32
Agriculture	29	13	.87	.03
Home Economics	9	32	.77	.60
Engineering	21	38	.33	.61
Business & Econ.	11	16	.76	.70
Education	24	79	-.26	.37

Table 5

Comparison of Freshman, Senior and Faculty AVL Scores

for Nine Curriculum Groups

Curriculum	Gp	N	T	E	A	S	P	R
Physical Science	Fr	18	50	39	39	33	40	39
	Sen	18	52	37	41	36	41	33
	Fac	18	54	32	42	39	38	36
Biology	Fr	43	43	38	37	38	39	44
	Sen	43	46	37	42	37	40	38
	Fac	9	56	33	42	35	41	33
Social Science	Fr	45	39	39	38	39	41	43
	Sen	45	41	39	44	38	43	35
	Fac	27	52	30	50	36	41	32
Humanities	Fr	30	37	37	44	39	41	43
	Sen	30	36	37	51	36	41	39
	Fac	37	45	28	56	35	37	40
Agriculture	Fr	13	44	44	30	37	41	43
	Sen	13	48	44	36	35	40	38
	Fac	29	48	41	35	35	40	41
Home Economics	Fr	32	37	40	40	39	37	47
	Sen	32	36	39	43	42	38	42
	Fac	9	38	39	40	36	39	48
Engineering	Fr	38	47	45	33	35	43	39
	Sen	38	48	48	35	33	45	31
	Fac	21	52	38	41	33	39	38

Table 5 continued

Curriculum	Gp	N	T	E	A	S	P	R
Business & Econ.	Fr	16	44	45	31	36	45	40
	Sen	16	37	49	34	35	49	36
	Fac	11	42	42	42	35	44	36
Education	Fr	79	36	38	38	42	39	47
	Sen	79	37	36	45	41	39	41
	Fac	24	46	35	42	38	40	40

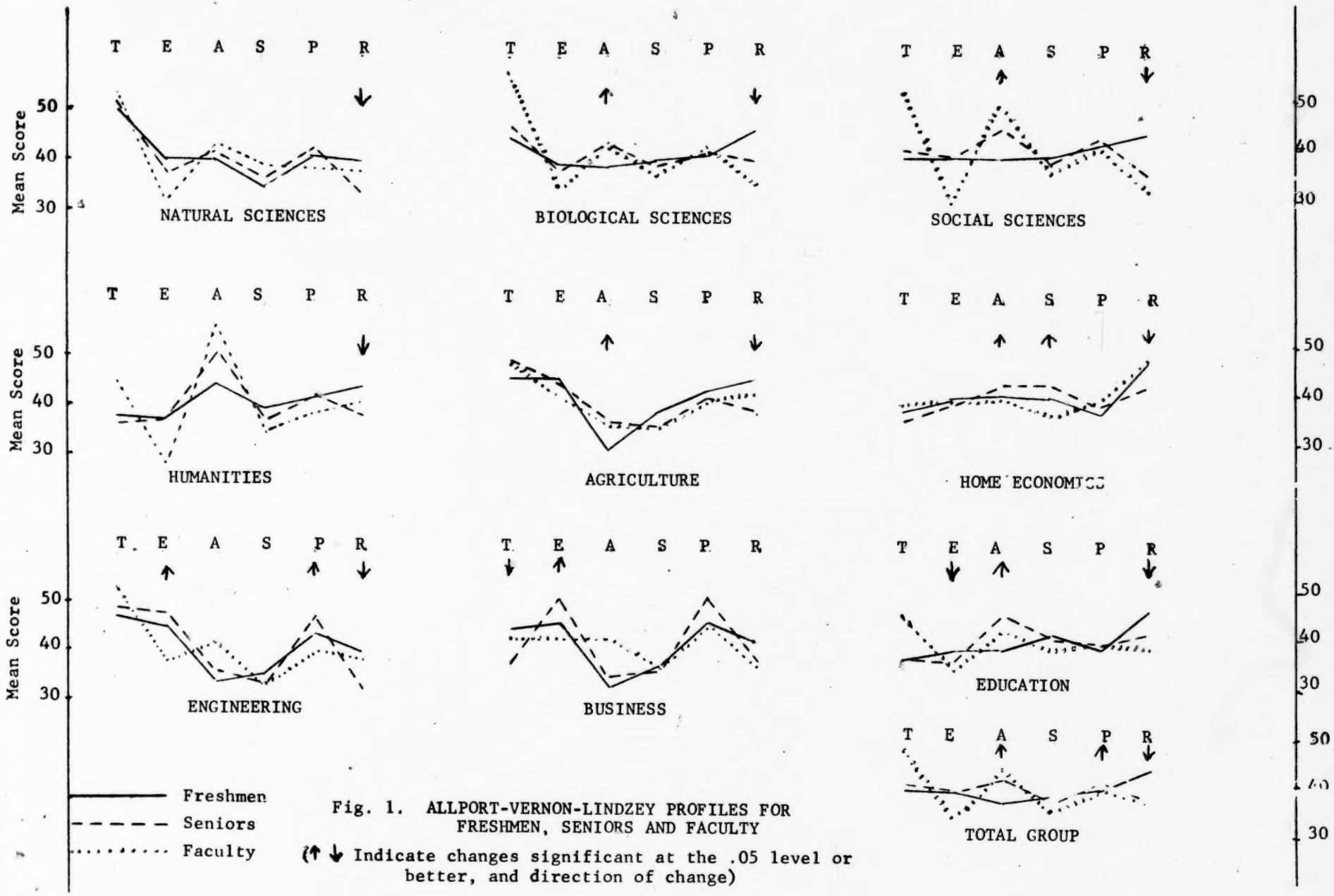

Fig. 1. ALLPORT-VERNON-LINDZEY PROFILES FOR FRESHMEN, SENIORS AND FACULTY

(↑ ↓ Indicate changes significant at the .05 level or better, and direction of change)